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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WANG, QUAN ZHEN	

ART UNIT	PAPER NUMBER
2613	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/913,578	OREN ET AL.	
	Examiner	Art Unit	
	Quan-Zhen Wang	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi (U.S. Patent US 6,466,348 B1) in view of Milton et al. (U.S. Patent US 6,631,018 B1) and Admitted Prior Art (page 15, lines 15-18) (APA), and further in view of Sato (U.S. Patent US 5,491,686).

Regarding claim 25, Izumi discloses a node (fig. 21) for processing east-west optical signal (fig. 21, signal from transmission line 301 to transmission line 302) and west-east optical signal (fig. 21, signal from 304 to 303) in a fiber optical communication network (fig. 1C), the node comprising: a first optical block (fig. 21, combination of elements 325, 315, 360, and 340, and related elements; and fig. 7, the detailed structure of a monitoring and controlling apparatus) adapted to receive control information included within upstream east-west optical signal (fig. 21, supervisory signal from transmission line 301) at a first frequency and transmit control information within downstream east-west optical signal (fig. 21, supervisory signal to transmission line 302) at the first frequency; a second optical block (fig. 21, combination of elements 326,

316, 391, and 341, and related elements) adapted to receive control information included within upstream west-east optical signal (fig. 21, the supervisory signal from transmission line 304) at a first frequency and transmit control information within downstream east-west optical (fig. 21, the supervisory signal to transmission line 303) signal at the first frequency; and a control device (fig. 21, monitoring and controlling signal transmitting and receiving circuit 315 and 316), for processing control information received by each of the first and second optical block and providing within a second information of each of the first and second optical block control information adapted for use by another node (column 18, lines 11-54); wherein the first frequency (supervisory signal) is dropped and re-generated by each node in the network. Izumi differs from the claimed invention in that Izumi does not specifically teach to combine channels of the first upstream optical signal with the channels of the first down stream optical signal to provide at least one valid copy of each channel in response to a fault that results in disruption of the control information. However, as it is admitted by Applicant, it is well known in the art to combine signals from different optical paths onto a common path "using his/her knowledge of SONET UPSR" (the instant specification, page 15, lines 13-18; and Remarks filed on May 23, 2006). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal combination method, as it is admitted by Applicant, in the system of Izumi in order to provide path protection. The modified system of Izumi and APA does not specifically disclose that the control device selects optical signal path based on a relative quality of the optical signals. However, it is well known in the art to select signal

path based on signal quality. For example, Sato discloses to select the signal path having better signal quality (column 5, lines 1-5). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to select optical signal path based on a relative quality of the optical signals, as it is taught by Sato, in the modified system of Izumi and APA in order to provide high quality services.

3. Claims 1, 6, 9, 12-16, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi (U.S. Patent US 6,466,348 B1) in view of Milton et al. (U.S. Patent US 6,631,018 B1) and Admitted Prior Art (page 15, lines 15-18) (APA), and further in view of Sato (U.S. Patent US 5,491,686).

Regarding claims 1 and 9, Izumi teaches a node (fig. 21) for processing upstream optical signal and downstream optical signal in a fiber optic communication network (fig. 1C), the node comprising: a first optical block (fig. 21, combination of elements 325, 315, 360, and 340, and related elements; and fig. 7, the detailed structure of a monitoring and controlling apparatus) adapted to receive control information included within upstream optical signal (fig. 21, supervisory signal from transmission line 301) at a first frequency and transmit control information within upstream optical signal (fig. 21, supervisory signal to transmission line 302) at the first frequency, and an add-drop module (fig. 21, ADM 360) to drop optical signals from the upstream optical signal and add optical signal to the upstream optical signal; a second optical block (fig. 21, combination of elements 326, 316, 391, and 341, and related elements) adapted to receive control information included within downstream optical

signal (fig. 21, the supervisory signal from transmission line 304) at a first frequency and transmit control information within downstream optical (fig. 21, the supervisory signal to transmission line 303) signal at the first frequency, and an add-drop module (fig. 21, ADM 391) to drop optical signals from the downstream optical signal and add optical signal to the downstream optical signal; wherein the first frequency (supervisory signal) is dropped and re-generated by each node in the network; and a control device (fig. 21, monitoring and controlling signal transmitting and receiving circuit 315 and 316), for processing control information received by each of the first and second optical block and providing within a second information of each of the first and second optical block control information adapted for use by another node (column 18, lines 11-54). Izumi further discloses an example of a structure of a monitor and controlling apparatus (fig. 7), which can be used for both the first and second optical block, comprising a first device (fig. 7, O/E converter 183) for converting a first optical signal at a first frequency carried by the network into a first electrical signal, a second device (fig. 7, combination of element 185, 186, and 187) for demodulating from the first electrical signal first information modulated on the first optical signal; a third device (fig. 7, combination of elements 188, 189, 190) for modulating on a second electrical signal second information, a fourth device (fig. 7, E/O converter 184) for converting the second information modulated on the second electrical signal into a second optical signal at the first frequency. Izumi differs from the claimed invention in that Izumi does not specifically disclose that the system comprising in the first and second optical block a fifth device for providing a third optical signal at a second frequency, the third optical

signal having third information modulated on it, a sixth device for multiplexing the second and third optical signals and placing the multiplexed second and third optical signals on the network as upstream optical signal. However, it is well known in the art to included a fifth device for providing a third optical signal at a second frequency, the third optical signal having third information modulated on it, a sixth device for multiplexing the second and third optical signals and placing the multiplexed second and third optical signals on the network as upstream optical signal in a add/drop node in an optical network. For example, Milton discloses an optical add/drop node comprising a fifth device for providing a third optical signal at a second frequency (fig. 3, the E/O converter connected to the second channel into channel filter 18 connected to fiber 2), the third optical signal having third information (fig. 3, payload signal) modulated on it, a sixth device (fig. 3, MUX 11 connected to fiber 2) for multiplexing the second and third optical signals and placing the multiplexed second and third optical signals on the network as upstream optical signal (fig. 3, signal in fiber 2). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the devices of disclosed by Milton in the system of Izumi. One of ordinary skill in the art would have been motivated to do so in order to add/drop a plurality of payload signals at each node in the network. The modified system of Izumi and Milton differs from the claimed invention in that Izumi and Milton do not specifically teach to combine channels of the first upstream optical signal with the channels of the first down stream optical signal to provide at least one valid copy of each channel in response to a fault that results in disruption of the control information. However, as it is admitted by

Applicant, it is well known in the art to combine signals from different optical paths onto a common path "using his/her knowledge of SONET UPSR" (the instant specification, page 15, lines 13-18; and Remarks filed on May 23, 2006). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal combination method, as it is admitted by Applicant, in the modified system of Izumi and Milton in order to provide path protection. The modified system of Izumi, Milton, and APA does not specifically disclose that the control device selects optical signal path based on a relative quality of the optical signals. However, it is well known in the art to select signal path based on signal quality. For example, Sato discloses to select the signal path having better signal quality (column 5, lines 1-5). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to select optical signal path based on a relative quality of the optical signals, as it is taught by Sato, in the modified system of Izumi, Milton, and APA in order to provide high quality services.

Regarding claims 6, and 21-24, Izumi further teaches that a fiber optic network (fig. 1C) including the node (fig. 1C, node 118B) of claim 1 and further including a second node (fig. 1C, node 118C), the second node including a first device for converting a first optical signal at a first frequency (SV signal) carried by the network into a first electrical signal, the second node further including a second device for demodulating first information from the first electrical signal modulated on the first optical signal, the second node further including a third device for modulating second information on a second electrical signal, and the second node further including a fourth

device for converting the second information modulated on the second electrical signal into a second optical signal at the first frequency (column 18, lines 11-54).

Regarding claim 12, Izumi further teaches a network includes a closed loop optical fiber, one of the first-mentioned nodes and at least one of the other nodes coupled to the closed loop optical fiber (fig. 1C).

Regarding claims 13, Izumi further teaches a network includes two closed loop optical fibers for carrying the first optical signal in opposite directions, each node being coupled to both optical fibers (fig. 1C).

Regarding claim 14, Izumi further teaches that the two closed loop optical fiber also carry the third optical signal in the two opposite directions (fig. 3).

Regarding claims 15-16, Izumi further teaches that the fiber optic network includes a closed loop optical fiber, one of the first-mentioned nodes and at least one of the other nodes coupled to the closed optical fiber (fig. 1C).

4. Claims 2-5, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi (U.S. Patent US 6,466,348 B1) in view of Milton et al. (U.S. Patent US 6,631,018 B1), Admitted Prior Art (page 15, lines 15-18) (APA), and Sato (U.S. Patent US 5,491,686), and further in view of Darcie (U.S. Patent US 4,701,904).

Regarding claims 2-5, 7-8, and 10-11, Izumi further discloses to drop and add optical signals at more different wavelengths (figs. 4-6). The system of Izumi, Milton, APA, and Sato differs from the claimed invention in that Izumi, Milton, APA, and Sato do not specifically teach the specific optical-to-electrical conversion devices, signal

demodulation device for optical receivers and signal modulation devices and electrical-to-optical conversion devices for optical transmitters. However, the specific configurations of optical receivers and transmitters are well known in the art. For example, Darcie discloses exemplary optical receiver (fig. 6) and optical transmitter (fig. 3). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the optical receivers and transmitters disclosed by Darcie into the modified system of Izumi, Milton, APA, and Sato in order to extract information from a dropping optical signal and provide information to an adding optical signal at a node in the network.

Response to Arguments

5. Applicant's arguments filed October 5, 2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw
12/13/2007

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